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THE
BROWN CREEK
WATERSHED

VOLI NO. 11

WADESBORO

May 15, 1935.



THE BROWN CREEK WATERSHED is being put out by the Soil Erosion Staff once each month, mainly to assist in telling what we are doing and maintain a spirit of good fellowship with the citizens of the community we endeavor to serve.

EXECUTIVE

W. A. Murray, Jr., Clerk
Miss Daisy Lee Hart, Stenographer.

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H. M. Stott, Ass't. Erosion Specialist.

SOILS

R. C. Pleasants, Ass't Soil Expert.

AGRICULTURAL ENGINEERING

Donald Christy, Ass't Agricultural Engineer.

AGRONOMY

A. A. Cone, Ass't Agronomist.
J. E. Michael, Ass't Agronomist.

FORESTRY

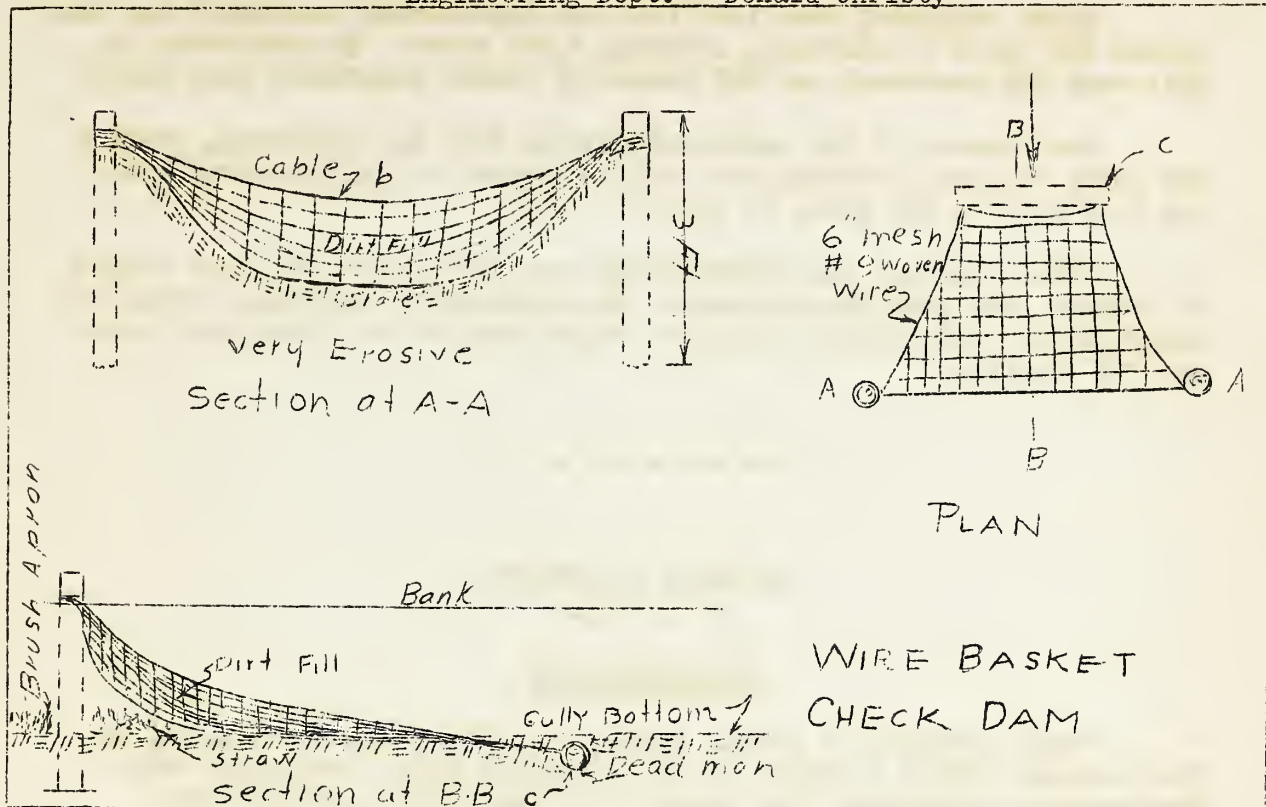
H. P. Hagge, Forester.
L. B. Hairr, Ass't Agricultural Aide.

Directing personnel for the ECW Camp at Polkton are as follows:

W. B. McManus, Superintendent.
R. B. Stamey, Engineer.
S. W. Meyers, Foreman.
S. J. Crocker "
C. S. Faw "
C. A. Neal "
C. W. Thompson "
M. L. Ross "
J. F. Martin "
B. W. Ingram, Mechanic.
W. L. Teal, Clerk-Stenographer.

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Mr. William X. Hull, of the Department of Agriculture, Washington, D. C., was a recent visitor to our project.



The Wire Basket Check Dam

The wire basket check dam is adaptable to gullies in which post holes can not be dug as needed in the wire fence post and log check dams.

As seen by the illustration the only post holes are on the banks. Between these posts a cable, b in figure, is connected just tight enough to leave a saddle shaped weir notch. To this cable is tied, with wire, the proper size piece of No. 9 6" woven mesh wire. The other end of the wire is attached to a log, c in figure, lying flat in the bottom of the gully. This log, or dead man, should be located 4 to 6 feet up the gully from the posts.

After attaching the wire in this fashion, straw, honeysuckle or some other similar material should be used to cover the wire before back filling. By back filling or covering the wire basket formed on the upper side of the check dam the dead man is weighted down in such a manner as to form a permanent anchor for the dam.

There should be provided an apron beneath the dam to prevent washing. This is done by jamming brush back under the dam or staking brush down under the weir notch, (see diagram).

This apron prevents erosion until some form of vegetative growth, preferably honeysuckle, in this area, is established. If honeysuckle is planted above, below and in the dam, it will in time completely control the gully.

Since beginning work last fall the engineering department has completed 339 miles of terraces, covering 3,050 acres. In completion of this work 180 permanent and 539 temporary outlet structures were built.

Some phases of the engineering work; that is, terracing, staking for strip cropping, staking for contour furrows or gully control work has been done on 169 farms to date.

Several issues ago instructions were given as to the best method of running rows with the terraces. The engineering department wishes to congratulate those farmers who have taken pains to see that their rows are run properly.

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AGRONOMY DEPARTMENT
A. A. Cone.

STRIP-CROPPING

Strip cropping is a term applied to the practice of growing on the contours strips or bands of close-growing crops alternately with the regular field crop. The crops which have proved satisfactory in the area as a strip are the grasses, small grains, sorghums and legumes. Such crops serve as a filter to run-off water on account of the fibrous root system, close growing nature and binding effect.

The strips do not have to be of any given width. They may range from twenty-five feet up to the width of two horizontal terrace intervals. The number and kinds of livestock on the farm may determine very largely the width of strips to be planted. The type of soil, slope and susceptibility to erode are factors to be considered in deciding upon the width of strips. Other factors are size of fields and kinds of inter-tilled crops. On mild slopes the row crop strip will bear a ratio of 3 to 1, while on the steeper slopes about 2 to 1 or 1 to 1.

Strip cropping is a method generally incorporated in the program to aid in combating erosion. The method may be put into practice on terraced or unterraced land. Stripping may be started immediately after the farmer agrees to cooperate with the Soil Erosion Service in its program and may be continued on indefinitely until it is convenient for the terracing crew to come in and construct the terraces. After completion of the terracing operations, alternate intervals may be planted to close growing crops and row crops such as cotton or corn planted between.

Soil improvement crops should be used largely where a strip rotation is practiced. In such a system both winter and summer legumes occupy the land a large proportion of the time, benefiting the soil in the following ways:

2. Improves soil structure.
3. Increases water-holding capacity of the soil by increasing organic matter content.
4. They break the effect of wind.
5. Binds the soil and lessens sheet erosion.
6. They obstruct run-off and reduce the velocity of flow and carrying power of water.
7. The more complete the plant cover the more adequate the protection against erosion.

One of the main factors in successful strip-cropping is to get a good stand of the crop seeded. The operation does not incur very much expense on the farmer, because he would have to either save seed or buy seed if he were going to put a solid field to forage crops. This is a very simple practice and the crop is more likely to be successful because it is planted in a better prepared seed-bed next to the cultivated row crop. Under certain conditions, where the rainfall is light and where steep and mild slopes occur, strip-cropping may be substituted for terracing.

Any farmer who wishes to do additional stripping to that already planned can see some members of the Soil Erosion Service and we shall be glad to help work out satisfactory plans.

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DEPARTMENT OF WILDLIFE CONSERVATION.

*Sydney Franklin.-

More and more farmers are coming to realize the importance of proper land uses in their efforts to obtain better financial returns and in making the farm a better place on which to live. The need for management and care of game and other useful wild animals is becoming more apparent daily. Man is constantly making less suitable the environmental habitats of these farms. The number of hunters is increasing. The preservation and increase of desirable wild animals is not only important from an economic standpoint, but also from the aesthetic, recreational and social benefits which are made possible. Since the revegetational work of an erosion control program will have a profound influence on the wildlife of the area concerned, it seems apparent that this phase of the work should be considered.

Since the presence and abundance of various native wild animals is largely regulated by the presence and abundance of suitable environments and since the various animals or groups require certain definite types of habitats for successful reproduction and survival, it is apparent that the revegetational plantings might become a source of pleasure and profit to the farmer by favoring the desirable animals or they might become a curse to the farmer by being more suitable for rodents, snakes, predators and other objectionable species. It so happens that most of these plants which fit into the scheme for building suitable environments are those which are not considered as pests by the farmers.

It is important to note in this connection that if honeysuckle is to be used extensively as an erosion control plant, the possibilities of developing an area for desirable species of animals will be greatly reduced. The habits of growth of the plant are more suitable for creating environments for the above mentioned undesirable animal groups unless properly managed. This plant is difficult to exterminate, and

will gradually take over cultivated fields, undoubtedly, however, there are places where this plant can be used with moderation.

In developing an area for a nearer maximum production of wildlife, it is necessary to supply all the wants of the desired forms within a radius of their natural range over as much of the area as possible and for the entire year. If the so-called pinch periods of the year - usually winter and early spring - are not provided for, much of the value of any other developments would be lost. A wildlife program must improve the environments during the entire year with special emphasis given to supplying food and cover during those periods when these requirements are normally deficient.

The wildlife plantings might be called the finishing touches for erosion control. Terracing, strip cropping, crop rotations, contour tillage and reforestation will constitute the main erosion control operations. However, terrace outlets, gullies and other badly eroded areas, and strategic points or places where erosion is liable to occur, need protection and control.

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At present the matter of "food patches" is receiving the utmost attention. By a "food patch" we mean any little odd corner on the farm of about half acre or less which has been planted with seed favored by the quail and other game birds and which will not be disturbed for the next few years. The Soil Erosion Service has a large quantity of seed available for this purpose. Among the various types of seed being used are: Sericea lespedeza, sesbania, chufas, loreda soybeans, mung beans, Egyptian wheat, milo maize, pearl millet, German millet, brown top millet, proso millet, and four varieties of cowpeas. Any farmer in the area interested in securing seed, and fertilizer, if necessary, for "food patches" is requested to get in touch with some member of the Soil Erosion Service or write to the Department of Wildlife Conservation, Soil Erosion Service, Wadesboro.

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Uncontrolled erosion may, quite appropriately, be likened to a run on a bank. - - No bank can long survive the continuous withdrawal of its resources. The stronger the bank the longer the survival but the inevitable result is ruin. - - Likewise, no farm can survive the continuous "run" of uncontrolled erosion with its constant removal of life giving properties. The best land may take years to deplete, but yields will become less each year the final result being worthless farm land - even more useless than a bank with frozen assets.

Just as a bank takes steps to make its deposits secure and provide against excessive withdrawal of resources, a land owner should take steps to control erosion, thereby preventing excessive removal of the fertile top soil.

FORESTRY NEWS

IMPORTANCE OF WOODLAND MANAGEMENT IN EROSION CONTROL.



It is a known fact that any area devoid of vegetation offers little or no protection from soil erosion and floods. The beat of the raindrop closes the pores of bare soil very quickly, the water cannot percolate into the soil and the water retaining power is low. As the rain water washes off very rapidly, carrying with it particles of soil, it forms streamlets making gullies and often water from so many gullies produces flooded lowlands.

A well managed woodland, properly stocked with trees is nature's own best soil binder and water holder. The canopy of living branches and leaves and the carpet of fallen leaves protect the soil against hard beating rains. The litter under the trees keeps the soil beneath it in a porous condition. The rains seep down underground and the litter on the ground and the fine network of roots absorb moisture, holds soil in place and prevents excessive evaporation. The rain water now forms the underground supply which feeds the springs and rivulets after the rain has stopped falling. It is a well established fact that forest cover and water resources have an intimate relationship.

Three ways in which woodlands hold back a surprisingly large amount of rainfall.

- (1) Leaves, twigs and herbaceous growth hold water.
- (2) Decaying vegetation acts somewhat like a sponge in its ability to absorb water.
- (3) When vegetable matter breaks down into soil particles, the particles are very small, and the smaller they are the more water they will hold. This is why mulch and humus will hold more water than sand. The way to get this vegetable matter is to prevent surface fires, plant trees to keep all land well covered with vegetation and to keep cattle and hogs out of the woodlands. Also any land that has a slope of over 10% should be put into permanent pasture or preferably, reforested.

LOBLOLLY PINE

- Pinus taeda L. -



Loblolly pine, known also as old field pine and shortleaf pine, is one of the south's most profitable lumber producing trees. It grows naturally in the southeastern states and westward through the southern states into Texas.



In some localities after the Civil War the spread of loblolly pine was rapid, large, abandoned areas of the Southern plantations were possessed by this tree, giving rise to the widespread common name, "Old Field Pine".



In an early history of Virginia, reference was made to the fact that, "Wood grows at everyman's door so fast that after it has been cut down it will, in seven years' time, grow up again from seed to substantial firewood". There is little doubt this Historian had loblolly pine in mind.

Rosemary pine, mature and well grown loblolly pine, served an early trade in ship masts in Virginia and North Carolina but the regions producing it were long ago lumbered and the best trees culled out.



Loblolly pine is used extensively in boat building and large quantities are bought by railroad companies for use in car construction and for railroad ties when treated with a preservative. When carefully sawed it is excellent flooring lumber and serves for practically all kinds of interior finish. It is also useful in furniture making.

DOMINANT SOILS IN BROWN CREEK WATERSHED AREA

The Wadesboro Soils

DESCRIPTION: The subsoil in the Wadesboro series is a red moderately friable brittle clay, with occasionally quartz veins occurring. The Wadesboro soil is represented by five different types based on the fineness or texture of the surface soil. These different types range from clay loam to sandy loam. These are clay loam, loam, gravelly sandy loam, fine sandy loam and fine sandy loam mixed phase. The surface material is grayish in the case of the lighter textured types as in the various sandy types while the surface soil of the loam and clay loam is reddish in color. The amount of surface soil in these sandy types varies with the degree of erosion that has taken place. In an undisturbed virgin area of the fine sandy loam type the surface is a grayish to light yellowish brown fine sandy loam, underlain at about 3 to 5 inches by pale-yellow, heavier fine sandy loam. The subsoil, beginning at a depth of 6 to 12 inches is a brick red, moderately friable clay, showing in some places yellowish mottlings. The clay loam type consists of a brownish red or reddish brown clay loam which passes at an average depth of 5 to 6 inches into a rather compact, moderately friable, brick red clay. In this type practically no sandy material is encountered in the surface soil. In the gravelly sandy loam type there is in addition to the sandy material an abundance of rounded and angular quartz and quartzite gravel in the surface soil. The mixed phase fine sandy loam consists of patches of sandy loam and clay loam which are so small that a separation is not possible. This type is brought about largely by sheet erosion.

DERIVATION: The Wadesboro series is a residual soil formed from the disintegration of the Triassic sandstone, mudstone and shale.

OCCURRENCE: Most of the Wadesboro soil is found to the west of Brown Creek, but not so much in the immediate vicinity of White Store.

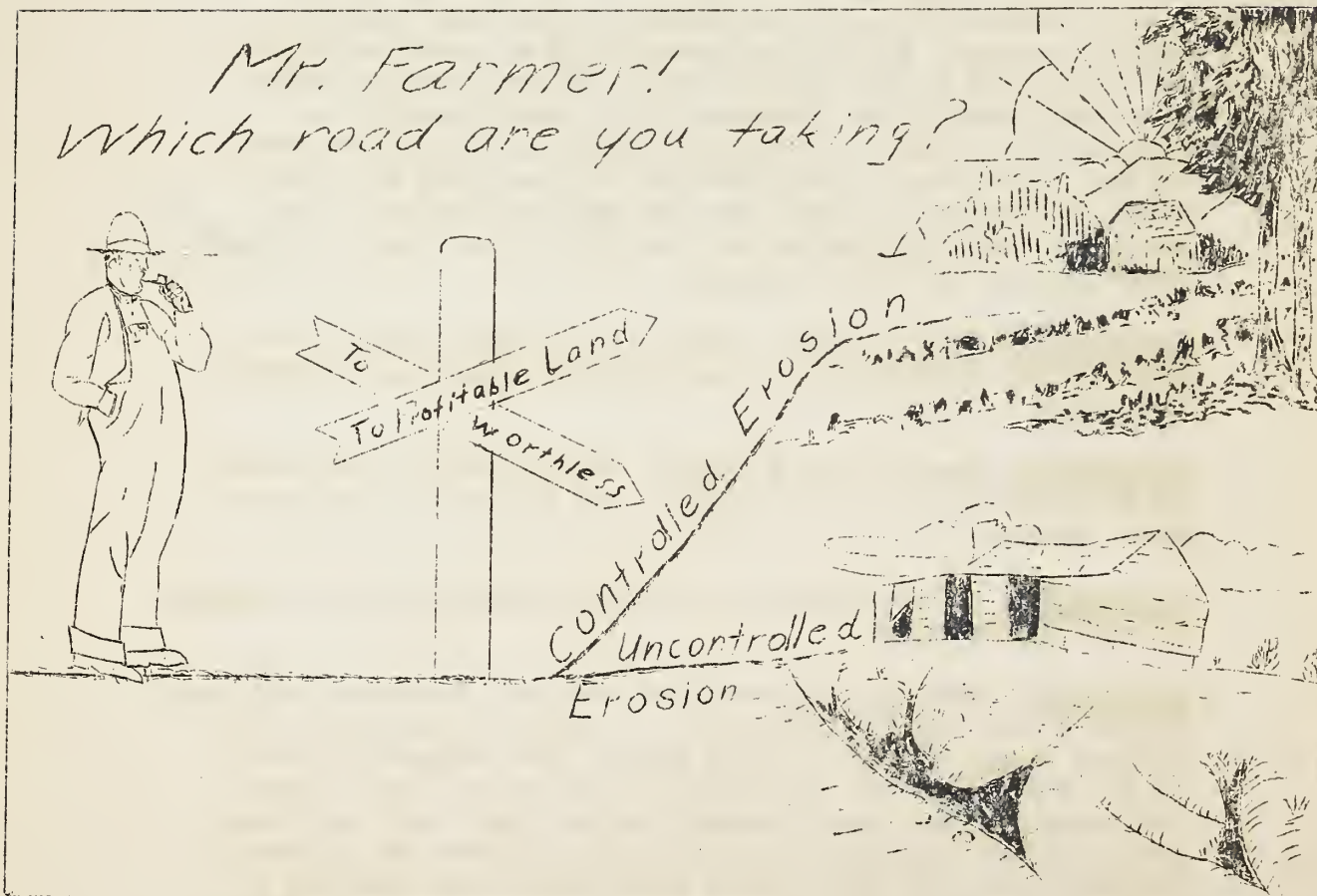
TOPOGRAPHY: Is undulating to rolling or hilly, and the drainage is well established.

FERTILITY: Chemical analyses show that the Wadesboro soils are rather low in all the nutrients. A complete commercial fertilizer should be used for all crops. The nitrogen content of the fertilizer may be reduced by the use of more legumes and turning under green manuring crops. This soil is rather acid, and the applications of lime will improve the physical properties of the soil. Crops will give a good response to liming, especially lime loving crops such as clovers, alfalfa and cowpeas.

CROP ADAPTATION: Although tobacco is not grown in this area it can be grown successfully on the better types of the Wadesboro fine sandy loam. The Wadesboro soils are adapted to cotton, small grain, corn and forage crops. There is less inclination of cotton to rust on this soil than on soils with yellow subsoils. Row crops should not be grown on the Wadesboro clay loam as it is impossible to hold this soil under these circumstances. The gravelly loam type in some places contains so much rock material that cultivation is not successful, and for this reason such soil should be put to pasture or forest.

DEGREE OF EROSIVENESS: The Wadesboro soils are very susceptible to sheet and gully erosion. The sandy types are less susceptible than the clay loam and loam.

CONTROL MEASURES: Erosion can be checked on the Wadesboro soils by proper terracing, contour tillage, rotations, winter cover crops and by broad and narrow strip-cropping.



ECW CAMP

Our program for the area's benefit has been so varied and generally expansive during the past month that to treat with any one subject would be futile, but then to treat with all would require too much space, therefore, we will speak briefly of a few important phases of the work that has been accomplished by our forces during this period.

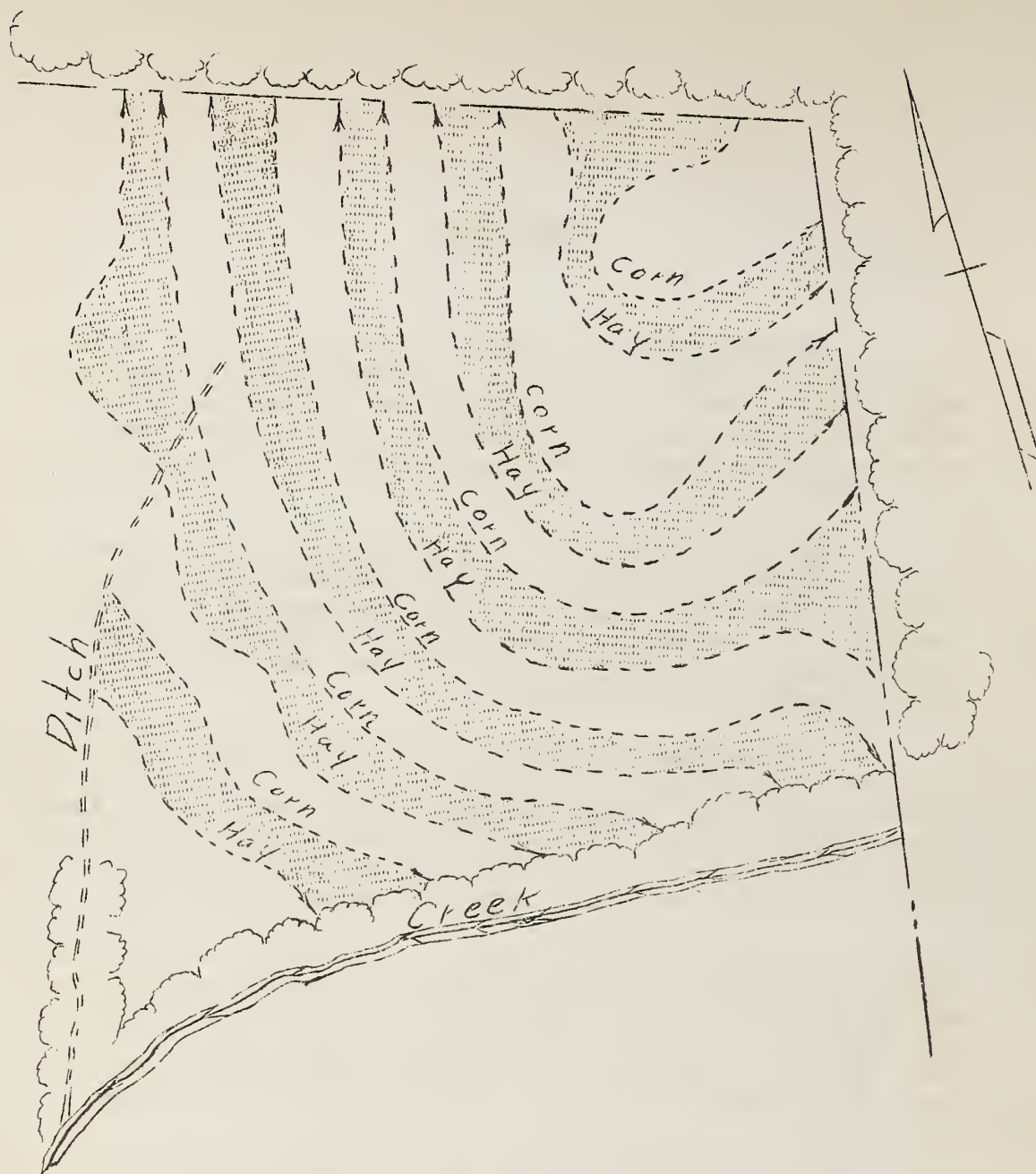
We would like, first, to call your attention to the splendid vegetative covering that has been produced to protect terrace outlets and ask your continued co-operation in the protection of the coverings or sod conditions. We would suggest that you advise with the Agronomy Department heads as to the future treatment of these areas.

A second item we feel is of great importance, is that work that has been performed under the direction of the Forestry Department, namely: woodlot or timber stand improvement. Several demonstrational plots of this work have been accomplished, pretty well scattered over the area. We would invite anyone to visit these sites for information on this important phase of the work.

Of course, we all appreciate the valuable terracing program and we would like to again express our kindly feeling for the assistance that you have rendered in furnishing whatever help you were able to command in constructing fills, outlet channels, etc. We are confident that you will definitely maintain these wonderful structures for reasons that are obvious to us all.

And in this connection, we would be highly gratified if you will freely call on the Agricultural Engineering Department as to the best method of protection for your terraces as well as information as to the best manner of preparing your land on and between the terraces for seed beds.

Your criticisms are expected and always welcomed.



STRIP CROPPING

The above is a reproduction of erosion control plans for a field covered by one of our agreements and illustrates clearly the advantages of strip cropping in erosion control.

This field will be terraced and planted to corn and mixture of soy beans and sudan grass in alternate terrace spaces. The hay crop will be sown over the entire terrace ridge and channel - the corn rows will occupy the space between the terrace ridges and run with the terrace. This plan, which is only one of many variations of strip farming, lessens the run-off of water and collection of soil in the terrace channel, thus protecting it from breaks during heavy rains.